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## MIDDLE PLEISTOCENE FAUNA OF VESHENSKAYA (MIDDLE DON RIVER, ROSTOV REGION, RUSSIA)

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The Veshenskaya locality yields fossil mammal remains for many years. The site is located in the 40–45 m high coastal cliff at the left bank of the Don River between Veshenskaya and Lebyazhenskii settlements of the Rostov region. According to different researchers, bone bearing beds are confined to sediments of second or third alluvial terraces. Three levels with fossil bones have been detected. The lower bed is at the base of the 10–12 m thick fluvatile member, at the boundary with underlying basal layered brownish-gray clay. This clay bed contains shells of freshwater molluscs. The lower fluvatile member is represented by cross-bedded white quartz sand with interbeds of gravel and clay. This level produces the highest number of large and small vertebrates bones. The second fossiliferous bed is in the bed of dark gray sandy clay at about 10–15 m above the base of the fluvatile member. This bed contains sporadic poorly preserved bones of large mammals. Both lower bone beds likely have a similar age. Upsection with erosional unconformity there occurs a 20 m thick member of yellowish fine grained rhythmic sands. It is crowned by 3–5 m thick sandy loam and light loam with buried burrowings of rodents (krotovines). According to the geological literature, this, upper, bone bed of the section yielded remains of *Marmota bobac*, *Citellus* sp., *Ellobius* sp., *Apodemus* sp., *Microtus oeconomus*, *M. (Stenocranius) gregalis*, *Microtus* sp., *Eolagurus luteus*, *Lagurus lagurus*, *Clethrionomys* sp., *Allactaga* cf. *jaculus*. This association is dominated by yellow lagurine and marmot. The age of the fauna was determined by Dr. N. Kazantseva as early Late Pleistocene (Mikulino = Eemian interglacial) (Study of the Quaternary deposits..., 1989).

The lower fluvatile member was dated by thermoluminescent method in the range 200–185 ka (Study of the Quaternary sediments..., 1989). These results should be, however, treated with caution.

The fauna of the lower part of the section has been previously interpreted by us as early Late Pleistocene and correlated with Mikulino (Eemian)

interglacial (Baygusheva, 1970; Baygusheva et al., 2003, 2004). The revised faunal list contains *Sorex* sp., *Castor fiber*, *Spermophilus* sp., *Cricetus* cf. *cricetus*, *Lagurus lagurus*, *Microtus arvalis*, *Microtus agrestis*, *Microtus gregalis*, *Microtus oeconomus*, *Microtus* sp., *Arvicola chosaricus*, *Clethrionomys glareolus*, *Mustela nivalis*, *Canis lupus lunellensis*, *Vulpes* sp., *Ursus* (*Spelearctos*) *savini rossicus*, *Leo spelaea*, *Mammuthus primigenius* (early form), *Equus* cf. *latipes*, *Equus hydruntinus*, *Coelodonta* sp., *Cervus* cf. *elaphus*, *Megaloceros giganteus*, *Alces* sp., *Bison priscus*, *Saiga* cf. *tatarica*.

Molars of the water vole *Arvicola chosaricus* have undifferentiated enamel (SDQ close to 100). This is typical for Late Khasarian faunas of the Lower Volga, and correlative faunas of the second half of the Middle Pleistocene and Eemian (Mikulino) interglacial of Late Pleistocene in Central and Western Europe. The overall appearance of the fauna, including evolutionary level of steppe lagirine *Lagurus lagurus* and the vole *M. gregalis* are typical for Middle-Late Pleistocene faunas of Eastern Europe. A number of forms of large mammals common to the late Middle Pleistocene Khazar faunal unit, such as *Elasmotherium sibiricum*, and *Camelus knoblochi* are missing in this burial. Stratigraphic distribution of *Ursus savini rossicus* in the steppes of Eastern Europe was mainly limited to Middle Pleistocene.

The frequency of plates in m1 and m2 (7.5–8 per 10 cm) and the enamel thickness (2.0–2.2 mm) of the mammoth from Veshenskaya indicate the early, thick enameled form of *Mammuthus primigenius*.

The dimensions of the most numerous species of the association, the large bison, are intermediate between the values of bisons from Mosbach (Germany, Middle Pleistocene) and the Late Pleistocene *B. priscus*.

The herpetofauna of the lower fossil bed contains the common spadefoot *Pelobates fuscus* and sand lizard *Lacerta* cf. *agilis*, which are nowadays associated with steppe and forest habitats with dry soils.

The fish fauna of the lower fossil bed includes gudgeon *Gobio* cf. *gobi*, undermouth *Chondrostoma* aff. *variabile*, dace *Leuciscus leuciscus*, carp *Rutilus* aff. *frisii*, roach *Rutilus* cf. *rutilus*, rudd *Scardinius erythrophthalmus*, pike *Esox lucius*, and perch *Perca fluviatilis*. The presence of gudgeon, dace, and undermouth may indicate a relatively deep river with a swift current and a sandy bottom. The presence of roach and rudd may indicate the oxbow conditions.

The mollusc fauna obtained from the upper level of the basal clay bed contains freshwater gastropods *Valvata pulchella*, *Bithynia* sp., *Lymnaea* (*Galba*) *truncatula*, *Planorbis planorbis*, *Gyraulus laevis* and a bivalve Pisidiidae gen. This association represents a modern stagnophilous boreal fauna lacking any warm-water elements that indicates a temperate climate water body with a weak current.

The predominance of steppe and forest forms among terrestrial vertebrates, indicates the predominance of open and semi-open landscapes. The banks of large paleo-Don River were overgrown by floodplain forests.

This study integrates data on invertebrates and lower and higher vertebrates of the Veshenskaya locality. It is shown that the biota of the lower fossiliferous level of the site witnessed a cool and relatively arid climate. It is likely correlative to the transition from interstadial to glacial climatic phase of late Middle Pleistocene.

This vertebrate fauna of Veshenskaya is important for late Middle Pleistocene paleoecology and paleogeography of the Middle and Lower Don River region.

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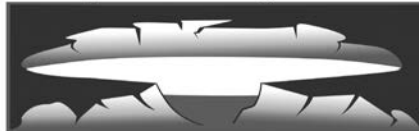
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